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CASE REPORT – OPEN ACCESS

Metastatic Esophagogastric Junction Adenocarcinoma Masquerading as Primary Thyroid Malignancy: A Case Report

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ABSTRACT

Background: Distant metastasis of neoplasm to the thyroid gland represents an unusual clinical manifestation, especially in an individual without a prior history of malignancy. The most frequent site of origin is the renal system, followed by the respiratory system. Metastatic spread from the gastro-digestive tract is rare, and it mostly occurs from the colorectum.

Case Report: A 70-year-old woman presented with thyroid swelling and right vocal fold paralysis that have been going on for 6 months in the absence of upper digestive tract symptoms. Ultrasound-guided biopsy revealed metastatic adenocarcinoma. Its origin was confirmed through an endoscopic biopsy of an exophytic mass forming from the cardioesophageal junction. Computed tomography staging revealed an advanced-stage disease, with metastatic deposits over multiple organs. The patient was given palliative chemotherapy and supportive treatment. She succumbed to death at 1 month post-diagnosis.

Conclusion: Secondary thyroid malignancy represents a rare entity and should be contemplated as one of the differential diagnoses of a goiter. A thorough workout should be performed in atypical thyroid malignancy to avoid unnecessary thyroidectomies in widespread metastasis.

Keywords: Thyroid, neoplasm metastasis, esophagogastric junction

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INTRODUCTION

The incidence of metastasis to the thyroid gland remains exceedingly low in clinical series, with a prevalence of 1.4% in patients undergoing evaluation of thyroid malignancy (1). The most frequent site of origin is the renal system, followed by the respiratory system (2). Metastatic spread from the gastro-digestive tract is rare, and it mostly occurs from the colorectum (3, 4). An extensive search of the English medical literature revealed not more than 10 reported cases of esophageal carcinoma metastasis to the thyroid gland to date (4, 5).

CASE REPORT

A 70-year-old woman with underlying ischemic heart disease, diabetes mellitus, and hypertension was referred to the otolaryngology department for an insidious onset of an anterior neck mass with a duration of 6 months. It has rapidly increased in size for the past 1 month. In addition, she complained of voice changes, voice fatigue, and aspiration. There was neither history of radiation to the head and neck region nor family history of malignancy.

Upon clinical examination, she was cachexic and spoke with a breathy voice. The anterior neck swelling was measured at approximately 10 × 7 cm, and healthy overlying skin was observed (Fig. 1). Upon palpation, it was found to be irregular and hard. The mass did not move when deglutition or tongue protrusion was performed. Flexible nasoendoscopy revealed clinical evidence of glottic insufficiency, with a paralyzed right vocal fold at the paramedian position. Sonographic examination of the thyroid revealed a diffusely enlarged gland with multiple solitary nodules. The mass was hyperechoic and hypervascular as well as had ill-defined margins and foci microcalcification. All these findings were indicative of malignancy (Fig. 2). Fine needle aspiration cytology (FNAC) of the thyroid gland revealed malignant epithelioid tissue clusters of significant pleomorphism, with a brisk mitotic activity and severe cellular atypia. Subsequent ultrasound-guided biopsy revealed a metastatic adenocarcinoma with features suggestive of hepatoid differentiation. The malignant cells were positive for immunochemistry staining of cytokeratin (CK) AE 1/3 (Fig. 3), epithelial membrane antigen (EMA), and hepatocyte paraffin (HepPar) 1 but negative for CK 20, calcitonin, thyroid transcription factor (TTF) 1, synaptophysin, and thyroglobulin.

The patient underwent esophagogastroduodenoscopy (OGDS) and colonoscopy for further evaluation. An exophytic growth over the esophagogastric junction was observed, for which biopsy confirmed the diagnosis of adenocarcinoma. Unfortunately, computed tomography (CT) evaluation revealed an advanced-stage disease, with metastatic deposits over multiple organs, including the lungs, liver, and spine. The patient was given palliative chemotherapy and supportive treatment. She succumbed to death at 1 month post-diagnosis.

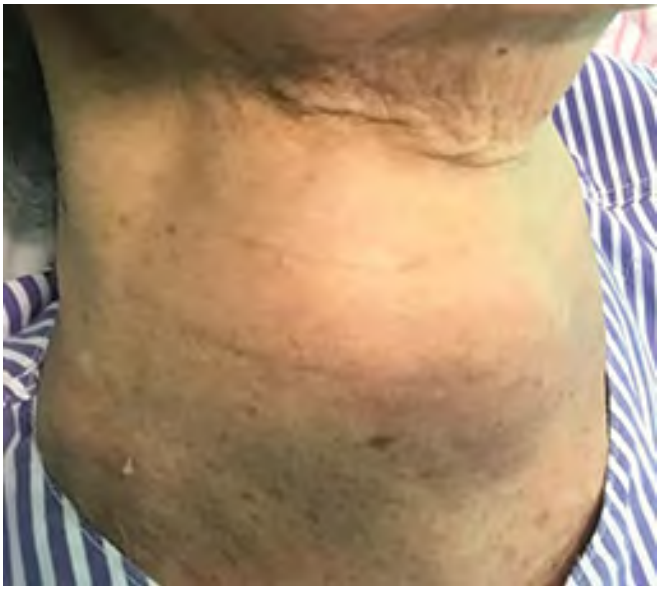

Figure 1. Clinical photography of a huge goiter

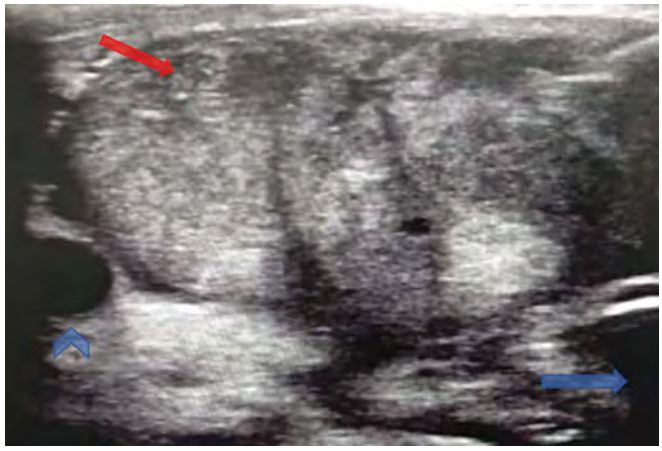

Figure 2. Ultrasonography of the neck illustrates hypervascularized, hyperechoic thyroid nodules with foci of microcalcification (arrow in red). All the features are indicative of malignancy. The carotid artery (arrowhead) and the trachea (arrow in blue) are shown

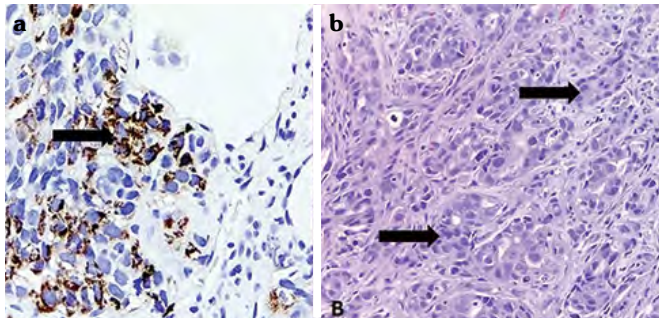

Figure 3. (a) Histology of the thyroid gland shows malignant cells with focal positivity toward HepPar 1 staining (arrow in black) 400×. (b) Histology of the esophagogastric junction tumor shows malignant glands. The tumor cells are arranged in irregularly shaped, fused glands with indistinct lumen (arrow in black) 200×

DISCUSSION

The thyroid gland receives an enormous amount of blood flow per gram of tissue. Despite its extensive vascular supply that favors hematogenous distribution of malignant cells, a vast dissimilitude exists in the reported metastatic spread in the thyroid when compared with the liver. Willis observed that the unique glandular micro-environment can be attributed to the low incidence of secondary thyroid malignancy. The rapid arterial blood flow within the gland minimizes the opportunity for neoplastic embolic arrest. Furthermore, the high oxygen tension and iodine level reduce the vulnerability to circulating tumor cells (6).

The clinical manifestation of secondary thyroid malignancy is almost invariably a goiter with occasional local symptoms, such as a change in voice, dyspnea, and dysphagia (2, 3, 5). A thorough history-taking may reveal a history of previous malignancy. The literature suggests that the majority of patients who presented with thyroid metastasis were diagnosed in the setting of a known malignancy (2, 5). In our present case, however, no associated symptoms were found to suggest a primary malignancy arising from the upper gastrointestinal tract. Further evaluation is indifferent from any other thyroid swelling. The use of high-resolution ultrasound with cross-imaging, such as CT and magnetic resonance imaging, may facilitate the evaluation of a thyroid mass. Nevertheless, no radiological imaging can reliably differentiate between primary thyroid lesions and metastasis (2). The use of FNAC yields a relatively high sensitivity and specificity in diagnosis (1, 2). The application of ancillary molecular markers and immunochemistry straining helps improve the accuracy (1, 2). Meddlesome techniques, such as core or open biopsy, can be considered if diagnostic dilemma is encountered, particularly in the interpretation of a poorly differentiated tumor (2).

Given its relatively rare occurrence, there is a lack of consensus in the management of an intrathyroidal metastasis. The therapeutic strategy should, therefore, be individualized based on a variety of confounding factors. These include the volume of the tumor, site of the primary lesion, multiorgan metastasis, histology type and grade, patient's comorbidity, and center expertise. The clinical manifestation of a secondary thyroid malignancy originating from the cardioesophageal junction tumor is relatively uncommon. Riihimaki et al. (7) observed that the liver remains the most expected location of second metastasis in cardia malignancy, followed by the lung and peritoneum. Thyroidectomy should be considered in surgically resectable cases without compromising the oncology outcome (2–4). Nixon et al. (2) observed a mean survival rate of approximately 2 years after surgery for thyroid metastasis, with a 5-year overall survival of 42%. In contrast, Lin et al. (1) found that majority of the cases had widespread metastases to other organs, which contributed to an overall reduced survival rate of 4 months from diagnosis. This was greatly reflected in our patients, who presented with an advanced state with multiorgan metastasis and was given palliative chemotherapy.

CONCLUSION

In conclusion, secondary thyroid malignancy represents a rare entity and should be contemplated as one of the differential diagnoses of a goiter. Our present case featured an unexpected metastatic deposit with symptoms identical to a primary thyroid malignancy. Histopathological examination remains the only avenue for confirming its diagnosis. A meticulous workout should be performed in atypical thyroid malignancy to avoid unnecessary thyroidectomies in widespread metastasis. The prognosis remains guarded when multiple organs are involved, especially in delay presentation.

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Conflict of Interest: The authors have no conflict of interest to declare.

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REFERENCES

1. Lin JD, Weng HF, Ho YS. Clinical and pathological characteristics of secondary thyroid cancer. Thyroid 1998; 8(2): 149–53. [CrossRef]
2. Nixon IJ, Coca-Pelaz A, Kaleva AI, Triantafyllou A, Angelos P, Owen RP, et al. Metastasis to the thyroid gland: A Critical Review. Ann Surg Oncol 2017; 24(6): 1533–9. [CrossRef]
3. Chen ED, Cheng P, Yan XQ, Ye YL, Chen CZ, Ji XH, et al. Metastasis of distal esophageal carcinoma to the thyroid with presentation simulating primary thyroid carcinoma: a case report and review of the literature. World J Surg Oncol. 2014; 12: 106. [CrossRef]
4. Reese J, Chebolu A, Shen Y, Mihlon F. Case report: Diffuse metastatic infiltration of the thyroid by esophageal adenocarcinoma mimicking non-neoplastic thyroid disease. Radiol Case Rep 2017; 13(1): 108–11. [CrossRef]
5. Yumoto S, Baba Y, Nomoto D, Oozono K, Eto K, Hiyoshi Y, et al. Thyroid metastasis from esophageal adenocarcinoma: a case report and literature review. Surg Case Rep 2019; 5(1): 137. [CrossRef]
6. Willis RA. Metastatic tumours in the thyreoid gland. Am J Pathol 1931; 7(3): 187–208.3.
7. Riihimäki M, Hemminki A, Sundquist K, Sundquist J, Hemminki K. Metastatic spread in patients with gastric cancer. Oncotarget 2016; 7(32): 52307–16. [CrossRef]